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JOHN S. PRATT, ESQ
KILPATRICK STOCKTON, LLP
1100 PEACHTREE STREET
SUITE 2800
ATLANTA, GA 30309

EXAMINER	
JOSEPH, DENNIS P	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,778	ADKINS ET AL.	
	Examiner	Art Unit	
	DENNIS P. JOSEPH	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *39-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *39-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 September 2009* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/10/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

1. This Office Action is responsive to arguments for No. 11/531,778 filed on September 4, 2009, 2009. Claims 39-54 are pending and have been examined.

Continued Examination

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 23, 2009 has been entered.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the color balancing that is done between the two projectors must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Please see the 112 first paragraph rejection for more details.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 53 objected to because of the following informalities: It recites therein "reducing an overall brightness of each of the first light and the second light comprises… Respectfully, perhaps there should be a ":" after the comprises limitation? Appropriate correction is required, thank you.

Claim Rejections – 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. **Claim 39, 48 and 54** rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant

art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 48 recites therein "filtering the first light and the second light by optically controlling a spectral energy distribution of each of the first light and the second light in at least one color channel of three color channels to **balance color** of the first light with color of the second light…"

Respectfully, the new drawing shows two separate projectors, each tiling a part of the image, or separate images, onto non-overlapping areas of the display. There is no support in the specification that the two projectors actually interact with each other to balance color with the two respective lights of the projectors. Examiner notices in the specification that the color balancing is done in **each** projector with regards to the main and secondary illumination sources, but again, not between the projectors themselves and this is actually claimed in Claim 54, but not in the other two independents. Similar issues exist in Claims 39 and 54.

Another interpretation is possible here though and that is the one that examiner will be making until. clarification for this rejection is provided. This is that the color for each projector is balanced so that the final output "makes sense", if you will, meaning one projector does not display something much darker/brighter than the image displayed by the other projector. In addition, as the specification noted, color balancing is performed between the various lights of

each projector. If this is what Applicant meant, then please note this and amend such that there is no confusion.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claim 42** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 42 recites therein of a "main first light" and then a "**secondary first light**." Respectfully, the limitations do not make sense and become more confusing when the second projector system is introduced. Please phrase these lights better, such as perhaps claiming that the first projector system creates a first, second, etc, light and then the second projector creates a third/fourth, etc, light. These issues exist in other claims as well, appropriate correction is required.

For purposes of examination, the two lights will be interpreted as being different from each other.

Claim Rejections – 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. **Claims 39-54** rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-David et al. (US 2004/0100589 A1) in view of Sugano (US 2001/0048560 A1)

Ben-David teaches in Claim 39:

A system comprising:

a first projection system capable of providing first light for forming part of an image, the first projection system comprising:

an adjustable bandpass filter of the first projection system for filtering the first light by optically controlling a spectral energy distribution of the first light in at least one color channel of three color channels **([0100] discloses the use of band-pass filters, a couple of them, to have three different ranges of wavelengths separated for the use of increasing brightness and efficiency)**, wherein the first light is produced by an illumination source of the first projection system **(Figure 8, white light source 104, [0094])**; and

an SLM device for each color channel of the three color channels of the first projection system **(Figure 8 shows the dichroic mirrors 108, [0094] discloses that preferably, one**

mirror is used for each desired primary color (RGB)), the SLM device for each color channel of the first projection system being capable of modulating the first light filtered by the adjustable bandpass filter of the first projection system **([0095] discloses the SLM 110 for modulating light. [0100] discloses using the band-pass filters with the elements shown in Figure 8)**, wherein the first projection system is capable of projecting the first light modulated by the SLM device for each color channel of the three color channels of the first projection system **(Figure 8, [0096], display screen 112 on which the SLM projects the imge)**; and

wherein the adjustable bandpass filter of the first projection system and the adjustable bandpass filter of the second projection system are capable of balancing color of the first light with color of the second light **(Please see 103 section below)** without reducing an overall brightness of the first light and the second light **(Figure 8, [0094], the mirrors 108 control the light passing through and recombine it towards the SLM 110. Note that all the light is either being passed to the SLM or to the next mirror for the next light. There is no loss of light in this reflecting process. [0100] discloses the use band-pass filters used with these elements. It is, respectfully, inherent that filters control/balance the amount of color that comes out, i.e. filtering process)**; but

Ben-David does not explicitly teach of using a second projection system, the elements of which mirror the first projection system and as an extension, that the first and second light/projector systems are tiled together to form an image.

However, multiple projector systems are well known in the art and in this case, as noted above, there are no differences between the first and second projections in their claimed limitations, just simply a duplication of parts. Under case law, this is not a patentable distinction as it would be obvious to one of ordinary skill in the art to be able to duplicate a part with no substantial change in functionality. Furthermore, multiple projector systems are well known in the art and examiner asserts Official Notice to this.

Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to duplicate the first project system, as taught by Ben-David, in order to achieve a multiple projector system with the motivation that it is not a patentable distinction, would be a simple substitution/addition of parts and is a known technique in the art.

Ben-David does not explicitly teach of "balancing colors" with regards to the multiple lights from different sources. Please note the 112 rejection on this as well.

However, when using multiple illumination sources, it is obvious, if not inherent, that the power supplied and used by each of the sources is adjusted so that a proper ratio of the primary colors can be achieved, i.e. color balance, good efficiency, etc. It is well known in the art that the three primary colors have different efficiencies (green has a higher efficiency than red and blue), so different amounts of light/power is required for each light source. This is well known in the art when using multiple projector systems, which examiner has asserted Official Notice to above.

To emphasize, in the same field of endeavor, spatial light modulators, Sugano teaches of using multiple optical illumination systems, 3R, 3G and 3B. (Sugano, Figure 3, [0035]). Each provides illumination for the RGB colors onto the prism 2 to be output to the display and adds light/brightness. In addition, color balancing is performed between the various light sources to obtain a good ratio, which is done by adjusting the amount of light/power which is provided by each illumination device. (Sugano, [0019]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to add the multiple, secondary illumination sources as taught by Sugano, in addition to Ben-David's main illumination source with the motivation that by using a well-balanced light ratio, a high brightness display can be achieved, with superior color reproducibility, high performance,good purity and good power consumption since each illumination source has an appropriate amount of power being supplied (Sugano, [0018]-[0019])

Ben-David teaches in Claim 40:

The system of claim 39, wherein the first projection system further comprises:

an integrating device for integrating the first light filtered by the adjustable bandpass filter of the first projection system **(Figure 8, [0094] discloses of a collimating lens 106 for collecting the focusing the light (read as integrating), identical to what Applicant's integrating bar does)**;

a color separating and re-combining device for receiving the first light integrated by the integrating device, separating the first light into the three color channels, directing the first light

separated into each of the three color channels into the SLM device of the first projection system corresponding to a respective color channel, and re-combining the first light modulated by the SLM device for each color channel of the three color channels of the first projection system to form part of the image from the first light **(Figure 8, [0094], the mirrors 108 control the light passing through and recombine it towards the SLM 110. Note that all the light is either being passed to the SLM or to the next mirror for the next light. There is no loss of light in this reflecting process as Figure 8 shows)**; and

a projection lens for projecting the part of the image from the first light received from the color separating and re-combining device. **(Figure 8, 117 to project the image onto the display screen 112)**

As per Claim 41:

The location of the relay, which house the band-pass filters, is a design choice. Ben-David teaches of using these filters in [0100] to filter the amount of light and to control variations. As discussed above, the functionality is the same the location choices are obvious design choices to one of ordinary skill in the art.

Ben-David and Sugano teach in Claim 42:

The system of claim 39, wherein the first light comprises main first light and secondary first light and the illumination source of the first projection system comprises:

a main illumination source capable of producing the main first light having a wavelength distribution of a red portion, a green portion, and a blue portion of a light spectrum **(Figures 3B**

and 8 show a main illumination source in which the light is separated); and

at least one secondary illumination source capable of producing the secondary first light having a wavelength distribution of at least one of the red portion, the green portion, or the blue portion of the light spectrum, the secondary first light having less optical power than the main first light, **(The combination with Sugano teaches to use at least one secondary illumination source for the primary colors and Sugano also teaches of varying the ratios of the primary colors through the amount of light/power provided, i.e. they have different power levels from each other)**

wherein the first projection system is capable of controlling the spectral energy distribution of the first light by adjusting an amount of the secondary first light produced by the at least one secondary illumination source. **(The combination of Sugano teaches to use multiple illumination sources to "work together" to provide the right ratio of primary colors)**

As per Claim 43:

Figure 7 of Ben-David shows a chromaticity graph for calculating the contribution levels of each of the primary colors and Suguano teaches of using multiple illumination sources for each of the primary colors. The combination together would teach the claimed limitation for calculating the amount of light from the secondary sources is needed to achieve a good ratio of the primary colors.

Ben-David teaches in Claim 44:

The system of claim 42, wherein the first projection system is capable of adjusting the amount of the secondary first light produced by the at least one secondary illumination source by controlling power supplied to the at least one secondary illumination source. **(This is obvious, if not inherent, with regards to the amount of power being supplied correlating to how much light is then produced, as a means to control this)**

Ben-David teaches in Claim 45:

The system of claim 42, wherein the adjustable bandpass filter of the first projection system is capable of optically controlling the spectral energy distribution of the first light in at least one color channel of three color channels by optically attenuating the secondary first light. **([0068] discloses a neutral density (ND) filter for this purpose)**

Ben-David teaches in Claim 46:

The system of claim 42, wherein the at least one secondary illumination source of the first projection system is associated with an adjustable dichroic filter for allowing a spectral energy distribution of the at least one secondary illumination source of the first projection system to be shifted toward longer or shorter wavelengths. **(Ben-David's chromaticity diagrams show the various combinations of the primary colors, and depending on the selected ratio, the wavelengths are adjusted)**

Ben-David teaches in Claim 47:

The system of claim 39, wherein the adjustable bandpass filter of the first projection system is capable of optically controlling the spectral energy distribution of the first light in at least one color channel of three color channels by adjusting an amount of each primary color of the first light **(Figure 8, [0094], the mirrors 108 control the light passing through and recombine it towards the SLM 110. Note that all the light is either being passed to the SLM or to the next mirror for the next light. [0100] discloses the use band-pass filters used with these elements. It is, respectfully, inherent that filters control/balance the amount of color that comes out, i.e. filtering process)**, wherein the adjustable bandpass filter of the first projection system is capable of determining the amount by:

determining chromaticities of each primary color of the first light when the adjustable bandpass filter of the first projection system is in a neutral position **(This limitation is obvious in light of Ben-David chromaticity graphs and teachings of controlling the amount of light being passed through the mirrors/band-pass filters. Figure 4A shows the different positions with the neutral density filter and the color wheel)**; and

adjusting the adjustable bandpass filter of the first projection system until the first light has a desired chromaticity for each primary color. **([0100], this is obvious in light of the above statement of using the filters to achieve the correct output)**

Ben-David teaches in Claim 48: (With the 112 rejection in mind)

A method comprising:

providing first light for forming a first part of an image, the first light being provided by a first projection system **(Figure 8 shows the elements used in projecting the**

light. Please note the path of the light);

filtering the first light by optically controlling a spectral energy distribution of the first light in at least one color channel of three color channels to balance color of the first light with color of the second light **(Please see 103 section below)** without reducing an overall brightness of each of the first light and the second light, the first light being filtered by the first projection system **(Figure 8, [0094], the mirrors 108 control the light passing through and recombine it towards the SLM 110. Note that all the light is either being passed to the SLM or to the next mirror for the next light. There is no loss of light in this reflecting process. [0100] discloses the use band-pass filters used with these elements. It is, respectfully, inherent that filters control/balance the amount of color that comes out, i.e. filtering process)**;

modulating the first light filtered by the first projection system for each color channel of the three color channels **(Figure 8 shows the dichroic mirrors 108, [0094] discloses that preferably, one mirror is used for each desired primary color (RGB))**; and

projecting the first light onto a screen by the first projection system **(Figure 8, [0096], display screen 112)**; but

Ben-David does not explicitly teach of using a second projection system, the elements of which mirror the first projection system and as an extension, that the first and second light/projector systems are tiled together to form an image.

However, multiple projector systems are well known in the art and in this case, as noted above, there are no differences between the first and second projections in their claimed limitations, just

simply a duplication of parts. Under case law, this is not a patentable distinction as it would be obvious to one of ordinary skill in the art to be able to duplicate a part with no substantial change in functionality. Furthermore, multiple projector systems are well known in the art and examiner asserts Official Notice to this.

Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to duplicate the first project system, as taught by Ben-David, in order to achieve a multiple projector system with the motivation that it is not a patentable distinction, would be a simple substitution/addition of parts and is a known technique in the art.

Ben-David does not explicitly teach of "balancing colors" with regards to the multiple lights from different sources. Please note the 112 rejection on this as well.

However, when using multiple illumination sources, it is obvious, if not inherent, that the power supplied and used by each of the sources is adjusted so that a proper ratio of the primary colors can be achieved, i.e. color balance, good efficiency, etc. It is well known in the art that the three primary colors have different efficiencies (green has a higher efficiency than red and blue), so different amounts of light/power is required for each light source. This is well known in the art when using multiple projector systems, which examiner has asserted Official Notice to above.

To emphasize, in the same field of endeavor, spatial light modulators, Sugano teaches of using multiple optical illumination systems, 3R, 3G and 3B. (Sugano, Figure 3, [0035]). Each

provides illumination for the RGB colors onto the prism 2 to be output to the display and adds light/brightness. In addition, color balancing is performed between the various light sources to obtain a good ratio, which is done by adjusting the amount of light/power which is provided by each illumination device. (Sugano, [0019]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to add the multiple, secondary illumination sources as taught by Sugano, in addition to Ben-David's main illumination source with the motivation that by using a well-balanced light ratio, a high brightness display can be achieved, with superior color reproducibility, high performance,good purity and good power consumption since each illumination source has an appropriate amount of power being supplied (Sugano, [0018]-[0019])

Ben-David and Sugano teach in Claim 49:

The method of claim 48, wherein providing first light for forming the first part of the image comprises:

providing first main light by a main illumination source of the first projection system (**Figures 3B and 8 show a main illumination source in which the light is separated**); and

providing first secondary light by at least one secondary illumination source of the first projection system, the first secondary light having less optical power than the first main light (**The combination with Sugano teaches to use at least one secondary illumination source for the primary colors and Sugano also teaches of varying the ratios of the primary colors through the amount of light/power provided, i.e. they have different power levels from each**

other),

wherein providing first secondary light by at least one secondary illumination source of the first projection system comprises controlling the spectral energy distribution of the first light to balance color of the first light with color of the second light without reducing the overall brightness of the first light by adjusting an amount of the first secondary light provided by the at least one secondary illumination source of the first projection system. **(The combination with Sugano teaches to use multiple illumination sources and to find a good ratio of the primary colors. As for not reducing the overall brightess, please see Ben-David's Figure 8)**

Ben-David teaches in Claim 50:

The method of claim 49, wherein adjusting the amount of the first secondary light provided by the at least one secondary illumination source of the first projection system comprises controlling power supplied to the at least one secondary illumination source of the first projection system. **(This is obvious, if not inherent, with regards to the amount of power being supplied correlating to how much light is then produced, as a means to control this)**

Ben-David teaches in Claim 51:

The method of claim 49, wherein adjusting the amount of the first secondary light provided by the at least one secondary illumination source of the first projection system comprises optically attenuating the first secondary light. **([0068] discloses a neutral density (ND) filter for this purpose)**

As per Claim 52:

Figure 7 of Ben-David shows a chromaticity graph for calculating the contribution levels of each of the primary colors and Suguano teaches of using multiple illumination sources for each of the primary colors. The combination together would teach the claimed limitation for calculating the amount of light from the secondary sources is needed to achieve a good ratio of the primary colors.

Ben-David teaches in Claim 53:

The method of claim 48, wherein filtering the first light and the second light by optically controlling the spectral energy distribution of each of the first light and the second light in at least one color channel of three color channels to balance color of the first light with color of the second light without reducing an overall brightness of each of the first light and the second light comprises **(Figure 8, [0094], the mirrors 108 control the light passing through and recombine it towards the SLM 110. Note that all the light is either being passed to the SLM or to the next mirror for the next light. Please note that there is no loss of brightness in this process. [0100] discloses the use band-pass filters used with these elements. It is, respectfully, inherent that filters control/balance the amount of color that comes out, i.e. filtering process)**:

adjusting an amount of each primary color of the first light by:

determining chromaticities of each primary color of the first light when an adjustable bandpass filter of the first projection system is in a neutral position **(This limitation is obvious**

in light of Ben-David chromaticity graphs and teachings of controlling the amount of light being passed through the mirrors/band-pass filters. Figure 4A shows the different positions with the neutral density filter and the color wheel); and

adjusting the adjustable bandpass filter of the first projection system until the first light has a desired chromaticity for each primary color. **([0100], this is obvious in light of the above statement of using the filters to achieve the correct output)**

Ben-David teaches in Claim 54:

A system comprising:

a first projection system, comprising:

a plurality of SLM devices, one for each color channel **([0095] discloses the SLMs 110 for modulating light)**;

a main illumination source for providing main light **(Figures 3B and 8 show a main illumination source in which the light is separated)**;

at least one secondary illumination source for providing secondary light having less optical power than the main light;

an adjustable bandpass filter for optically controlling a spectral energy distribution of at least one color channel of at least one of the main light or the secondary light by filtering the main light and the secondary light **([0100] discloses the use of band-pass filters, a couple of them, to have three different ranges of wavelengths separated for the use of increasing brightness and efficiency. See 103 below)**,

an integrating device for integrating the main light and the secondary light as filtered by

the adjustable bandpass filter **(Figure 8, [0094] discloses of a collimating lens 106 for collecting the focusing the light (read as integrating), identical to what Applicant's integrating bar does)**;

a color separating and re-combining device for receiving integrated light from the integrating device, separating the integrated light into each color channel, directing the light in each color channel to a respective SLM device, and re- combining modulated light from the plurality of SLM devices to form part of an image **(Figure 8, [0094], the mirrors 108 control the light passing through and recombine it towards the SLM 110. Note that all the light is either being passed to the SLM or to the next mirror for the next light. There is no loss of light in this reflecting process as Figure 8 shows)**; and

a projection lens for projecting the part of the image from the color separating and re-combing device **(Figure 8, 117 to project the image onto the display screen 112)**; but

Ben-David does not explicitly teach of using a second projection system, the elements of which mirror the first projection system and as an extension, that the first and second light/projector systems are tiled together to form an image.

However, multiple projector systems are well known in the art and in this case, as noted above, there are no differences between the first and second projections in their claimed limitations, just simply a duplication of parts. Under case law, this is not a patentable distinction as it would be obvious to one of ordinary skill in the art to be able to duplicate a part with no substantial change

in functionality. Furthermore, multiple projector systems are well known in the art and examiner asserts Official Notice to this.

Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to duplicate the first project system, as taught by Ben-David, in order to achieve a multiple projector system with the motivation that it is not a patentable distinction, would be a simple substitution/addition of parts and is a known technique in the art.

Ben-David does not explicitly teach of "balancing colors" with regards to the multiple lights from different sources. Please note the 112 rejection on this as well.

However, when using multiple illumination sources, it is obvious, if not inherent, that the power supplied and used by each of the sources is adjusted so that a proper ratio of the primary colors can be achieved, i.e. color balance, good efficiency, etc. It is well known in the art that the three primary colors have different efficiencies (green has a higher efficiency than red and blue), so different amounts of light/power is required for each light source. This is well known in the art when using multiple projector systems, which examiner has asserted Official Notice to above.

To emphasize, in the same field of endeavor, spatial light modulators, Sugano teaches of using multiple optical illumination systems, 3R, 3G and 3B. (Sugano, Figure 3, [0035]). Each provides illumination for the RGB colors onto the prism 2 to be output to the display and adds light/brightness. In addition, color balancing is performed between the various light sources to

obtain a good ratio, which is done by adjusting the amount of light/power which is provided by each illumination device. (Sugano, [0019]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to add the multiple, secondary illumination sources as taught by Sugano, in addition to Ben-David's main illumination source with the motivation that by using a well-balanced light ratio, a high brightness display can be achieved, with superior color reproducibility, high performance,good purity and good power consumption since each illumination source has an appropriate amount of power being supplied (Sugano, [0018]-[0019])

Response to Arguments

12. Applicant's arguments considered, but are respectfully moot in grounds of new rejection(s).

Applicant is thanked for the interview and the subsequent new drawing which show a multiple projector system. However, with the focus of the claims now going to this multiple projector system, some drawing and 112 issues have been introduced. Appropriate clarification is required. It is the examiner's belief that very little of the specification deals with multiple projectors being used in conjunction, so some of the new limitations don't seem to have support, or at least examiner does not see this.

While the same references are being applied, the teachings of Sugano have been altered because of the new claim limitations and therefore, Applicant's arguments about why the

combination are moot, specifically for the color efficiency/balancing issues. Furthermore, Ben-David's deficiencies are for a field emission display and therefore seeks an optical display, which also results in no loss in resolution. During the interview, it was discussed whether adding a second projector system was patentably distinct as there is case law which notes that duplication of parts is not a patentable difference. While there was a respectful disagreement, it is the examiner's suggestion/opinion that if the two projector systems were not patentably made distinct, i.e. different functionality, then it really would be obvious to one of ordinary skill in the art to add multiple projectors to achieve a tiled display. While examiner respects Applicant's position that multiple display systems have different problems and different solutions than single display systems, it is important to note that there is no functionality difference **claimed** that forces the examiner to have to interpret it like that, or not be able to make an obviousness statement using case law.

Applicant is advised to overcome the current rejection by either claiming differences between the two structures. Another way is also provided. Examiner noticed in the specification several variations of the secondary illumination sources, such as the percent power. Applicant seems to have alluded to this in the claims with regards to the "color balancing." However, it is well known that the primary colors have different efficiencies, so the power sources for each should optimally be different to achieve better efficiency and lower power consumption. To that effect, Sugano teaches this as noted in the rejection. However, Applicant's specification deals with the ratios and power mixing to a good degree, so claiming some detail there would overcome the current rejection.

Conclusions

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS P. JOSEPH whose telephone number is (571)270-1459. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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DJ

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629